

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

1. (currently amended): Pleatable filter structure for use in a filter panel, comprising:
~~containing~~
ion exchange particles distributed within a fibrous framework, wherein characterised
~~in that~~
the filter structure is expanded ; and so as to contain
the expanded filter structure contains enough space to allow the ion exchange particles to swell or to be in a swelled state ~~as compared to dry ion exchange particles,~~ without additional expansion of the filter structure.
2. (currently amended): The filter structure of claim 1, wherein the fibrous framework comprises :
composite structural fibers (1) ~~and composite thermoplastic fibers (4), the composite structural fibers (1) comprising a first relatively higher melting component and a first relatively lower melting component, the first relatively higher melting component having a melting point at least 20 °C higher than the first relatively lower melting component, and the ;~~
composite thermoplastic fibers (4) ~~having a relatively smaller denier than the structural fibers (1) and comprising a second relatively higher melting component and a second relatively lower melting component, wherein the composite structural fibers (1) form ;~~
a thermally bonded, fibrous network ~~in which the first relatively lower melting component bonds the structural fibers together at the cross-over points (2) to stabilize the fibrous network, and the composite thermoplastic fibers (4) are dispersed throughout and are bonded to the fibrous network by the application of heat so as to be immobilized, and wherein the ; and~~
ion exchange particles thermally ~~are bonded by the application of heat to the smaller denier composite thermoplastic fibers (4) and the filter structure is expanded so as to contain enough space to allow the ion exchange particles (3) to swell or to be in a~~

~~swelled state as compared to dry ion exchange particles, without additional expansion of the filter structure ,wherein~~
the first relatively higher melting component has a melting point at least 20 °C higher than the first relatively lower melting component;
the composite thermoplastic fibers have a relatively smaller denier than the structural fibers;
the first relatively lower melting component bonds the structural fibers together at cross-over points to stabilize the fibrous network;
the composite thermoplastic fibers are dispersed throughout the fibrous network and immobilized by thermal bonding thereto.

3. (currently amended): The filter structure according to claim 1 ~~of claim 1 or 2~~, wherein the expanded filter structure contains enough space to allow an increase of the ion exchange particle diameter of at least 38 % as compared to dry particles.

4. (currently amended): The filter structure according to claim 3 ~~of any one of claims 1-3~~, wherein the expanded filter structure contains enough space to allow an increase of the ion exchange particle diameter of at least 47 % as compared to dry particles.

5. (currently amended): The filter structure according to claim 1 ~~of any one of claims 1-4~~, wherein the ~~expansion of the filter structure~~ is expanded by exposing the filter structure ~~has been achieved by a process in which the filter structure was exposed to a humid environment or water.~~

6. (currently amended): The filter structure according to claim 1 ~~of any one of claims 1-5~~, wherein the ion exchange particles are macroporous polymers.

7. (currently amended): The filter structure according to claim 1 ~~of any one of claims 1-6~~, wherein the load of ion exchange particles is 100-2000 g/m², ~~preferably 300-1000 g/m² and most preferably 400-700 g/m².~~

8. (currently amended): The filter structure according to claim 1 ~~of any one of claims 1-7~~, wherein the ion exchange particles are monospherical and have ~~has~~ a diameter of 425-525 μm .

9. (currently amended): The filter structure according to claim 1 ~~of any one of claims 1-8~~, wherein the fibrous framework comprises thermally bonded fibers.

10. (currently amended): The filter structure according to claim 1 ~~of any one of claims 1-9~~, wherein the fibrous framework comprises :
a thermally bonded, fibrous network of coarse structural thermoplastic fibers ; and
having
fine thermoplastic fibers of relatively smaller denier than the structural fibers ~~being~~ ,
wherein
the fine thermoplastic fibers are dispersed throughout the fibrous framework and immobilized by thermal bonding bonded to the fibrous framework by the application of heat so as to be immobilized, wherein ; and
the ion exchange particles are thermal bonded ~~by the application of heat to the~~ smaller denier composite thermoplastic fibers.

11. (currently amended): A filter panel comprising the filter structure according to claim 1 ~~of any one of claims 1-10~~, wherein the filter structure is pleated and fixed into a filter panel frame.

12. (currently amended): The filter panel of claim 11, wherein the pleated filter structure has 0-25 pleats/dm, ~~preferably 5-20 pleats/dm and most preferably 8-15 pleats/dm.~~

13. (currently amended): The filter panel according to claim 11 ~~of claim 11 or 12~~, wherein the height of the pleats is 10-300 mm, ~~preferably 15-150 mm and most preferably 15-100 mm.~~

14. (currently amended): The filter panel according to claim 11 ~~of any one of claims 11-13~~, wherein the frame is made of stainless steel or aluminium.

15. (currently amended): The filter panel according to claim 11 ~~of any one of claims 11-14~~, wherein the pleated filter structure is fixed to the frame with ~~by means of~~ a polyurethane adhesive, ~~having~~ which has a total outgassing lower than 10 µg/g, confirmed by thermal desorption gas chromatography mass spectroscopy (TD-GC-MS), with TD performed at 50 °C for 30 min and n-decane as external standard.

16. (currently amended): The filter panel according to claim 11, ~~comprising of any one of claims 11-15~~, wherein exterior sealing strips for avoiding air bypass, wherein the exterior sealing strips are made from a polymer having a total outgassing lower than 10 µg/g, confirmed by thermal desorption gas chromatography mass spectroscopy (TD-GC-MS) with TD performed at 50 °C for 30 min and n-decane as external standard.

17. (currently amended): Method of manufacturing the filter structure according to claim 1, ~~comprising any one of claims 1-10~~, ~~wherein a pleatable filter structure including ion exchange particles distributed in a fibrous framework, characterized in that~~ subjecting the pleatable filter structure ~~is subjected~~ to a moisture treatment ~~in which it is exposed to a humid or water containing environment, whereby~~ which swells the ion exchange particles ~~swell and~~ causes ~~cause~~ a permanent expansion of the filter structure, wherein the moisture treatment comprises exposure to a humid or water-containing environment.

18. (original): The method of claim 17, wherein the fibers of the fibrous framework are stretched as a result of the swelling of the ion exchange particles, and remain stretched.

19. (currently amended): The method according to claim 17 ~~of any one of claims 17-18~~, wherein the filter structure is subjected to the moisture treatment ~~exposed to this~~

~~environment~~ until the ion exchange particles have reached a moisture content of at least 20% by weight.

20. (currently amended): The method according to claim 19 ~~of any one of claims 17-19~~, wherein the filter structure is subjected to the moisture treatment ~~exposed to this environment~~ until the ion exchange particles have reached a moisture content of at least 30 % by weight.

21. (currently amended): The method according to claim 17 ~~of any one of claims 17-20~~, wherein the ion exchange particles have a moisture content of less than 10 % prior to the moisture treatment and present an increase in diameter during the moisture treatment of up to 38 %.

22. (currently amended): The method according to claim 17 ~~of any one of claims 17-21~~, wherein the humid environment ~~used in the moisture treatment~~ has a relative humidity of at least 70 % at a temperature of 20 °C.

23. (currently amended): The method according to claim 22 ~~of any one of claims 17-22~~, wherein the humid environment ~~used in the moisture treatment~~ has a relative humidity of at least 80 %, ~~preferably at least 90 %~~ at a temperature of 30 °C.

24. (currently amended): The method according to claim 17 ~~of any one of claims 17-23~~, wherein the filter structure is subjected to the moisture treatment in a batch process.

25. (currently amended): The method according to claim 17 ~~of any one of claims 17-23~~, wherein the filter structure is subjected to the moisture treatment in a continuous process.

26. (new): The filter structure according to claim 7, wherein the load of ion exchange particles is 300-1000 g/m².

27. (new): The filter structure according to claim 26, wherein the load of ion exchange particles is 400-700 g/m².
28. (new): The filter panel of claim 12, wherein the pleated filter structure has 5-20 pleats/dm.
29. (new): The filter panel of claim 28, wherein the pleated filter structure has 8-15 pleats/dm.
30. (new): The filter panel according to claim 13, wherein the height of the pleats is 15-150 mm.
31. (new): The filter panel according to claim 30, wherein the height of the pleats is 15-100 mm.
32. (new): The method according to claim 23, wherein the humid environment has a relative humidity of at least 90 % at a temperature of 30 °C.